School Nurse's Assistant Expert Screening System

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Abstract

The School Nurse's Assistant is designed to aid the School Nurse by providing a diagnostic discovery tool that also educates the student through the use of multimedia. Response initiated questions focus on the most pertinent student risk factors: lifestyle choices such as alcohol, drugs, and sexual activity. Because the questions are patient driven, the student stays interested as only relevant questions are presented. The School Nurse's Assistant provides the school nurse with increased sociographic information, and delivers cost-effective information to high risk segments of the student population. The potential for successful intervention is dramatic.

Engineered to satisfy the needs of the secondary school systems of the United States for checking the social activities of high school students, The Nurse's Assistant uses techniques of artificial intelligence for medical screening and complements them with a multimedia presentation designed to catch the interest of the students. Specifically, the computer aids the nurse by asking a series of background questions that would ordinarily require much of the nurse's time. The Nurse's Assistant then creates a complete report of the student's problems and their symptoms.

The questions, which first appear harmless and general, progress based upon the student's responses. For example, while at the same time the student sees a seductive picture of a member of the opposite sex, a question of their encounters with a sexually transmitted disease is posed. "Have you or any sexual partner ever had *Granuloma Inguinale?*" the screen reads. The choices listed are "Yes," "No," "Maybe," "I Don't Know, "Pass," and "Show Me." If the student responds "Show Me," then the seductive picture becomes a detailed medical photograph of genitalia infected with the Venereal Disease. The question is asked again. However, the student who has not encountered such a disease can select "No" and move on. Another example of the artificial intelligence expert system employed in The Nurse's Assistant would be if the student indicated that he or a close friend consumed alcohol regularly. The program would then initiate appropriate sequencing to determine the extent of alcohol consumption and administer standardized alcoholism diagnostic tests if warranted. Thus, the students who do not have problems will not be questioned or receive information about symptoms while troubled students, on the other hand, will see detailed medical photographs designed to educate them for future encounters.

Studies have shown that adolescent student responses are likely to be honest since the questions are being asked by an impersonal machine rather than an adult (and remember, in the mind of a troubled adolescent, adults are the enemy).

For the nurse, this software can be used to operate more efficiently because it allows the computer to conduct the initial interview while the nurse can be attending another student. It also allows the detection of high-risk behaviors at an early stage, allowing for effective intervention. The main focus of this program is to shift the time of the school nurse away from routine questioning. By delegating this task to the computer, the school nurse will be able to spend more time for further education and counseling: these higher value activities are what will allow the school nurse to become more proactive in guiding student lifestyles.